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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/008,451	11/30/2001	Theodore Timaru	WJT002-0022	5174

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EXAMINER

NGUYEN, LINH V

ART UNIT	PAPER NUMBER
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2819

DATE MAILED: 12/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/008,451

Applicant(s)

TIMARU ET AL.

Examiner

Linh V. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6-34 is/are rejected.
- 7) ☒ Claim(s) 3,5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

***Response to Amendment***

This application is in response to applicant's amendment received on 12/01/03.

Claims 1 – 34 are pending on this application.

***Response to Arguments***

1. Applicant's arguments filed 12/01/03 have been fully considered but they are not persuasive.

2. Under Remarks of Amendment received on 12/01/03, with respect to claim 1 applicant's argued that "the predistortion linearizer circuit of Powell (US5155488) does not located a predetermined distance from the input signal path and not physically coupled to the input signal path". Examiner respectfully disagrees.

Fig. 2 Powell disclose an amplifier comprising: power amplifier (7) having an input signal path (Output signal of [9]) and an output signal path (4); and a predistortion linearizer circuit that is (307, 312 - 316) capable of generating a distorted signal (312) which is reflected onto the input signal path (13) of the power amplifier and inputted into said power amplifier (1), wherein said predistortion linearizer is clearly located a predetermined distance from the input signal path and not physically coupled to the input signal path (RF coupling devices 307, 309 are not physical coupled to the input signal path)

3. With respect to claim 33, under remark applicant's argued that Johnston reference cannot use with a predistortion linear circuit. Examiner is respectfully traverses.

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The claimed invention points to a RF coupling device having controllable distance by a variable capacitor to reflect RF signal of interests. While Powell disclose having a RF coupling device with a predetermined distance to reflect RF signal of interest , and Johnson disclose a RF coupling device having controllable distance by a variable capacitor to reflect RF signal of interest. They both are analogous because they are relating to RF coupling device. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the predetermined distance controllable of RF coupling device taught by Johnston et al. to the RF coupling device of Powell' for the purpose of improving impedance matching between two coupling elements (Johnston et al., Col 20 lines 39 –41).

### **Claim Rejections - 35 USC § 102**

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 4, 6 – 8, 10 – 17, 19, 20 - 28, 30 – 32, and 34, are rejected under 35 U.S.C. 102(b) as being anticipated by Powell U.S. patent No. 5,166,448.

Regarding to claims 1, 10, 19, 30, and 34 Fig. 2 Powell disclose an amplifier comprising: power amplifier (7) having an input signal path an output signal path (4); and a predistortion linearizer circuit that is (307, 312 - 316) capable of generating a distorted signal (312) which is reflected onto the input signal path (13) of the power

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amplifier and inputted into said power amplifier (1), wherein said predistortion linearizer is located a predetermined distance from the input signal path and not physically coupled to the input signal path (307, 309), and said distorted signal compensates for at least some of the nonlinear spurs introduced by said power amplifier to the input signal (15) applied to the signal path and inputted into said power amplifier such that said power amplifier generates a compensated output signal (4).

Regarding to claims 2, 11, 31 wherein the predistortion linearizer includes: a diode (Fig. 4[428] is a distortion generator of 312); a coupling circuit (307) coupled to said diode, capable of introducing a relatively small amount of power from the input signal into said diode and further capable of reflecting the distorted signal generated by said diode back onto the input signal without being physically coupled to the input signal path (309); and a direct current adjustment circuit (4[423]), coupled to said diode, capable of adjusting the amount of direct current inputted into said diode (Fig. 3, Fig. 4).

Regarding to claims 12, 32 wherein said coupling circuit includes a microstrip having a predefined shape and located a predetermined distance from the signal path leading into said power amplifier (307).

Regarding to claim 4, 15, and 16, wherein said diode is a Schottky diode (Fig.4[428]) identical figure with claimed invention)

Regarding to claims 6, and 13 -14, wherein the coupling circuit and direct current adjustment are automatic or manual adjustment to optimize a shape of the distorted signal of the amplifier (Fig. 4[423]).

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Regarding to claims 7, and 17, wherein said predistortion linearizer does not affect the signal path or the operation of said power amplifier (Fig. 2).

Regarding to claim 8, wherein said transmitter is incorporated within a point-to-point Communication system (Col. 1 line 17).

Regarding to method claims 20 – 28, and 30, are deemed to be made clearly inherent by the structures of Powell as applied to claims 1 – 8, above.

### **Claim Rejections - 35 USC § 103**

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 9 and 18, are rejected under 35 U.S.C. 103(a) as being unpatentable over Powell, in view of Applicant Admitted Prior Art (AAPA).

Regarding to claim 9, and 18, Fig. 2 as applied to claims 1 – 8, above Powell discloses every aspect of applicant's claimed invention except for the amplifier is operating at or above 2 GHz. However the amplifier operated at or above 2 GHz is a well-known art and conventional as AAPA have indicated in Related-Art on page 4 line 6. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilizing the amplifier of Powell at or above 2GHz in wireless communication taught by AAPA.

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8. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Powell, in view Johnston et al. U.S. patent No 6,369,603.

Powell as applied to claim 31 above discloses every aspect of applicant's claimed invention, except for wherein the predetermined distance can be tuned to compensate for the nonlinear spurs using variable capacitors.

Fig. 18 Johnston et al. disclose a RF communication system comprising: the predetermined distance between two coupling elements (244, 232) can be tuned to compensate for the nonlinear spurs using metal variable capacitors (Col. 20 lines 50 – 60).

Powell and Johnston et al. are analogous, because they are from similar problem solving for RF coupling device, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the predetermined distance adjustment taught by Johnston et al. 's coupling to the predetermined distance of Powell's coupling for the purpose of improving impedance matching between two coupling elements (Johnston et al., Col 20 lines 39 –41).

***Allowable Subject Matter***

9. Claims 3 and 5, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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***Contact Information***

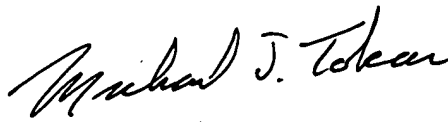
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linh Van Nguyen whose telephone number is (703) 305-1934. The examiner can normally be reached from 8:30 – 5:00 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Michael Tokar can be reached at (703) 305-3493. The fax phone numbers for the organization where this application or proceeding is assigned are (703-872-9306) for regular communications and (703-872-9306) for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

LVN

December 15, 2003

  
Michael Tokar  
Supervisory Patent Examiner  
Technology Center 2800